

Firing PISTOL FOR VIDEO GAMES
field of The Invention

The present invention relates to a pistol for a video game shooting system intended to be used by a player to enable a virtual actor to shoot at at least one virtual target. The virtual actor being the representation of the player in the game environment. More specifically, this pistol is intended to be used with video games run by a console or a computer, where the player must shoot at targets integrated in images that appear on a display system.

Background of the Invention

According to the prior art, pistols currently used by video game players are used in systems which include:

- a display system showing an image from a game which includes at least one virtual target; and

- game processing means with microprocessors intended to be connected to the display system to control the images shown on the display system,

the pistol, intended to be connected to the game processing means, and comprised of means to trigger shots on the target following a shooting axis, which are activated by the user, to send an instruction to shoot to the game processing means at an instant chosen by the player, the displacement of the shooting axis relative to the virtual actor is caused by the movement of the pistol due to the user's action relative to the display system.

This type of pistol enables the player only to move the shooting axis of the virtual actor in order to point and shoot at a

target. The path followed by the virtual actor in the game is pre-determined by the game processing means according to the program in memory.

Summary of The Invention

Therefore, the field of view of the virtual actor is not
5 chosen by the player. The player cannot determine the movement of the virtual actor in the game environment, this movement being imposed by the game. The virtual actor can only shoot at targets which are presented to him and cannot search for them within the game environment.

10 *Insert 217* This type of gun is therefore frustrating for the player since he cannot control the movements of the virtual actor in the game.

The objective of the present invention is to remedy the drawbacks mentioned above, by simple, efficient and cost-effective means.

15 To that effect, according to the present invention, the above mentioned pistol is essentially characterized by the fact it includes integrated means to control the movement of the virtual actor, enabling the player to move the virtual actor in the game environment and enable the virtual actor to shoot in a location and
20 at a moment chosen by the player.

Thus, due to these features, the player is completely free to move the virtual actor in the game and make him shoot according to his own will, and not only according to the conditions imposed by the game, such as a pre-determined path the virtual actor must
25 follow. The player can therefore go in search of targets within

the game environment, make them appear and make the virtual actor shoot at them.

According to the present invention, the pistol could include one or several of the following features:

5 - the means to control the movements of the virtual actor which comprise a multidirectional control device integrated in the pistol;

 - the multidirectional control device permits movements of the virtual actor to the left, right, forward and back;

10 - the multidirectional control device can be composed of one of the following elements: a control pad, a joystick, a track-ball or directional buttons;

 - the pistol includes a button which switches the effects of the multidirectional control device and permits a lateral movement
15 of the virtual actor to the left or to the right.

 - the switching button also enables the multidirectional control device to cause a movement of the virtual actor's head up or down.

 - the pistol comprises a mechanical system with a mobile mass
20 intended to simulate recoil when the user is shooting.

 - the means of triggering shots on a target comprise a trigger.

 - the game processing means comprise a game console and the display system comprises a television set.

- the game processing means comprise a computer and the display system comprises a monitor.

- the display system can consist of a virtual reality display system.

5 - the projection of the shooting axis on the display system is represented by visible cross hairs on the game image.

- the pistol is intended to be physically connected to the game processing means.

An embodiment of the invention will now be described,
10 illustrated in figure 1 where the pistol, according to the present invention, is associated with a video game shooting system.

The figure represents a perspective view of the pistol 1 according to the invention, intended to be connected to a video game shooting system 2.

15 The video game shooting system 2 is intended in a known fashion, to be used by the user to enable a virtual actor to shoot at one or several virtual targets appearing in the game images.

To that effect, the video game shooting system 2 incorporates a display system 3 and game processing means with microprocessors
20 4. These game processing means with microprocessors can consist of a computer comprising memory in which the game program is stored, an operating system and a library. This computer is intended to be connected to the display system 3 which can consist of a computer monitor on which the images of the video game can scroll and

include at least one virtual target. The images are controlled by the computer program.

As a variation, the game processing means 4, can consist of a game console connected to a television set which serves as the display system.

sub
B/D As another variation, the display system can be replaced by a virtual reality system, such as a helmet or virtual reality goggles.

In each of these variations, the user represented by the virtual actor is situated in front of the display system.

The computer is connected to the pistol 1 which consists of a grip 10 supporting a frame 11 equipped with a trigger 12. The orientation of the frame 11 determines the shooting axis.

Located in a preferred manner, in the area where the grip of the pistol 10 holds the frame 11, the pistol 1 incorporates means to control 13 the movements of the virtual actor within the game environment. However, these means to control the movements of the virtual actor can be located underneath the barrel of the pistol, so that they may be activated by the hand of the user that is not holding the grip 10. These means consist of a multidirectional control device 13 which can be composed of one of the following elements: a digital or analog control pad, as well as a track-ball, a joystick or directional buttons.

In addition, towards the front of the frame 11, the pistol 1 includes a switching button 14 enabling, when it is pushed, the

multidirectional control device 13 to have a secondary function as described below.

The trigger 12 constitutes the means to fire at the target when it is pulled by the player.

5 The computer library allows recognition of the position of the pistol 1 relative to the display system 3 in such a way as to determine the position of the projection of the shooting axis on the display system. This enables the system to determine the position of impact when the player is shooting.

10 Therefore, after being turned on by the player, the program in the memory of the computer displays the images of the video game on the display system in which the virtual actor intervenes, by shooting at the appearing targets.

15 The player controls the virtual actor with the pistol, which allows him to simultaneously move the shooting axis of the virtual actor and also control his movements forward, back, left or right within the game environment.

20 In order to do so, the player moves the pistol relatively to the display system and thus, for a given position of the actor, he can move the shooting axis to hit the target that the player wishes to shoot.

In addition, the multidirectional control device 13 allows the player to move the virtual actor within the game environment. This control device may have four positions:

- when the player wishes to move the actor forward or back, the player pushes the device up or down respectively.

- when the player wants the virtual actor to move left relative to his original path, he firstly pushes the device to the left which makes the actor rotate to the left, and he then pushes the device forward to make the actor move forward relative to the newly defined position.

- in the same manner, when the player wishes to move the actor to the right, he pushes the device to the right then forward, to make the actor move in the new direction.

- by pressing and holding the switching button, the command on the multidirectional control device to the left or to the right makes the actor move laterally to the left or to the right. This movement is similar to a side-step.

Thus, with the pistol according to the present invention, the player can both move the virtual actor in every direction within the game environment, and also move the shooting axis after selecting a target in the field of view of the virtual actor. The player can therefore both move the virtual actor wherever he wishes within the game and simultaneously shoot at targets that he chooses anywhere in the game image.

As a variation, when the switching button 14 is pressed, the multidirectional control device allows the virtual actor to look up and down when the device is pushed up or down.

In order to increase the realism of the game, the pistol 1 can integrate mechanical means in which one or several masses move to simulate recoil when the user is shooting.

The player also has the possibility to represent the
5 projection of the shooting axis on the display system with cross hairs visible on the game image.

As another variation, the pistol 1 is not physically connected to the computer with a wire but transmits information via electronic waves.

10 Additionally, the multidirectional control device 13 and the switching button 14 can be placed in an ergonomical position other than that shown in figure 1.

It is understood that the shape of the pistol can be different from that shown in figure 1, it can, for example, have the shape of
15 a rifle, a machine gun or any other prehensible shape.

Insert A2